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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,160	12/14/2001	Shinichi Nonaka	011145	4237

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EXAMINER

WACHTEL, ALEXIS A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/926,160

Applicant(s)

NONAKA ET AL.

Examiner

Alexis Wachtel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Detailed Action

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1-5 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The term "high molecular weight" in claim 1 is a relative term which renders the claim indefinite. The term "high molecular weight" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
4. In regards to claims 3 and 4, Applicant use the term "acrylic type". What does Applicant mean by this? In addition, per claim 3, Applicant does not specify what kind of molecular weight is used in the equation. Does Applicant intend for weight average molecular weight to be used or number average molecular weight?

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1,2,4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03106942A in view of US 5,747,533 to Guzauskas.

JP 03106942 discloses a sheet that can be molded and shaped at a low temperature by impregnating a fibrous reinforcement with a photocurable unsaturated polyester monomer resin solution, with a saturated polyester resin film which can be swollen and softened by a component contained in the above resin solution (Abstract). Examiner notes that molded sheets are known to be pressed into a desired shape by being applied to a master mold. Such a master mold is molded into a specific shape.

JP 03106942 fails to teach the incorporation of polymethyl methacrylate into the sheet. Guzauskas teaches that fibre reinforced composites make use of acrylic resin thickener which delays the viscosity increase of said resin, thus allowing for fiber reinforcement to be incorporated before molding (Abstract). A preferred resin thickener is a polymethyl methacrylate resin having a molecular weight of 400,000 (Col 6, lines 57-60). In view of this teaching it would have been obvious for one of ordinary skill to have incorporated polymethyl methacrylate resin into the photocurable unsaturated polyester monomer resin disclosed by JP 03106942 motivated by the desire to improve overall processability of the resulting composite during manufacture.

Regarding claim 5, it would have been obvious for one of ordinary skill to have varied the amount of polymethyl methacrylate powder used according to the desired processability parameters required for a particular application. As such, determining the requisite amount of viscosity modifying polymethyl methacrylate powder would have been determined through the process of routine experimentation.

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7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03106942A in view of US 5,747,533 to Guzauskas in view of JP 06313019A.


The references as set forth above fail to teach that the unsaturated resin solution used could be an unsaturated acrylic monomer rather than an unsaturated polyester monomer. JP 06313019A teaches a polymerizable resin blend made of an acrylic monomer useful in making composite products such as artificial marble. As such, polyester and acrylic monomers are equivalent for purposes of applicability (Abstract). Examiner notes that acrylic monomers are also photo polymerizable. Examiner also notes that the acrylic monomers inherently possess the claimed solubility parameters.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Alex Wachtel, whose number is (703)-306-0320. The Examiner can normally be reached Mondays-Fridays from 10:30am to 6:30pm.

If attempts to reach the Examiner by telephone are unsuccessful and the matter is urgent, the Examiner's supervisor, Mr. Glenn Caldarola can be reached at (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


ELIZABETH M. COLE
PRIMARY EXAMINER